REMARKS

Reconsideration and reexamination of the above-identified application are hereby requested. Applicants' have carefully reviewed the Office Action. By this Amendment, the pending claims have been cancelled to facilitate on-going prosecution of the application. New claims added hereby are allowable as explained below.

An apparatus which embodies the present invention incorporates an obscuration member which has a variety of states including normal operational, and test state, which can selectively be presented in the path of a beam for a projected beam-type obscuration detector. The apparatus includes control circuitry coupled to the obscuration member so as to automatically place the obscuration member into a normal operational state, or one or more test states. The obscuration member in the one or more test states optically obscures, at least in part, the respective beam. In one disclosed embodiment, a plurality of test states can be provided with the obscuration member where each of the test states is associated with a different beam length. The control circuitry can select the appropriate obscuration test state based on the length of travel of the respective beam between the emitter and the sensor. In this way, the installation characteristics of various regions being monitored can readily be taken into account since in some installations the beam will have to travel a significantly longer distance than in other installations. In the disclosed embodiment, the control circuitry can automatically select based on actual beam length, the obscuration state to be used to carry out the desired beam strength test.

In yet another disclosed embodiment, the obscuration member can exhibit a beam alignment test state so that the control circuitry can automatically test beam alignment relative to the emitter and sensor of the detector. This provides a vehicle whereby automatic testing can be carried out over a period of time and any trends in changes in alignment can be detected and be dealt with by preventive maintenance.

Hartman et al teaches away from the claimed invention in that filter wheel 18 comprises three filters 23, 24, and 25:

> "the function of which is to pass only one of the three wave lengths 313nm (filter 23), 435nm (filter 24) and 546nm (filter 25) stopping the other wave lengths in each case." (Col. 7, ll. 7-10).

Thus, as described above in Hartman et al, the filter wheel 18 is used to select a specific absorption frequency to be analyzed which results are indicative of the contaminants or materials present in the flue 49. None of these relate to testing the device. Unlike the claimed structure, control filter 73 corresponds to an additional filtering level such that a composite of the results of 53 in combination with the results of respective filters 23, 24 and 25 is received by the circuitry 21 which is quite unlike and teaches away from the claimed invention.

Unlike the pending claims, none of the prior art documents noted by the Examiner in rejecting the claims as filed address conducting beam alignment determinations as claimed. In this regard, Hartman et al US Patent 4,126,396 discloses a system wherein the reflected beam 78 has a smaller diameter than the transmitted beam 50. The reflected beam 78 is coaxially positioned relative to the transmitted beam along a common central axis. As noted therein:

> "It is important that at the site of the reflector 13 the light beam 50 is of a greater diameter than the retroreflector so as to give all-round irradiation of the reflector 13 as can be seen from Fig. 1. In this way the flow of light thrown back from the reflector 13 undergoes no change in the event of certain relative shifts or tiltings of the optical axis between the reflector head 12 and the light transmitter-receiver." (Col. 6, ll. 45-52).

Hartman et al thus teaches away from the claimed apparatus. Galvin US Patent 4,749,871 addresses beam alignments in stating:

> "The transceiver head of the present invention thereby makes possible a quick and accurate beam alignment that readily accommodates settling and rotation of structural members upon which they are mounted with such a range of compensation as to insure ease of re-alignment even for severe settling and torsion-induced rotations. (Col. 2, l. 66-Col. 3, l. 4).
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> After preselected time intervals, the processor is repetitively operative to reduce the period of the transmitted pulse train for self-testing. The shortened pulses

produce a corresponding reduction in the intensity of the received signal energy. The processor is operated to compare the reduced levels to preselected but lower alarm thresholds provided therefore to simulate an alarm condition. The projected-beam smoke detector of the present invention thereby substantially reduces for example the possibility of mis-aligned optical components and other such sources of possible system malfunctions from remaining undetected and occasionally false and failure-of-alarm situations." (Col. 3, ll. 50-62).

Thus, as is made clear above, Galvin et al teach electrical-based testing. This is different from and teaches away from the claimed invention.

None of the other patent documents relied on by the Examiner in rejecting the pending claims, namely published application 2002/0180974 and Schwartz et al US Patent 5,416,575 disclose or suggest testing as claimed.

Beyond the above, none of the prior art of record addresses the problem solved by the present invention brought about by different lineal lengths of the path the beam travels between the source and sensor. Even in clear air conditions, as the beam travels between the source and the sensor over different lengths, differing return signals may well result both in clear air, prealarm or alarm conditions. None of the prior art of record addresses the claimed solution, including apparatus and method claims.

Hence, for at least the above reasons, the pending claims should all be allowable. Allowance of the application is respectfully requested.

Respectfully submitted,
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